

WHAT IS CLAIMED IS:

1. An optical moving amount detecting device comprising:
a light emitter,
a light receiver,

5 a first optical system for making light from the light emitter into a linear beam extending in parallel with a direction of movement of a detection object and casting the linear beam on the detection object,

a second optical system by which a linear reflected
10 beam that is the linear beam reflected from the detection object is made incident on the light receiver,

a storage unit for storing first output waveform signals that are outputted from the light receiver receiving the linear reflected beam at a first time point
15 and that represent an output distribution of the linear reflected beam along a longitudinal direction thereof and storing second output waveform signals that are outputted from the light receiver receiving the linear reflected beam at a second time point and that represent an output
20 distribution of the linear reflected beam along the longitudinal direction thereof, and

a moving amount detecting unit for detecting an amount of shift between the first output waveform signals and the second output waveform signals in the longitudinal
25 direction of the linear reflected beams and detecting a

moving amount of the detection object on basis of the amount of shift.

2. An optical moving amount detecting device as claimed
5 in claim 1, wherein the light emitter is composed of a plurality of semiconductor laser devices disposed linearly.

3. An optical moving amount detecting device as claimed
10 in claim 1, wherein a deflector for deflecting the linear reflected beam from the detection object is provided between the first optical system and the detection object.

4. An optical moving amount detecting device as claimed
15 in claim 1, wherein the moving amount detecting unit comprises a waveform correcting section for multiplying parts of the first output waveform signals and of the second output waveform signals by a plurality of coefficients according to a light intensity distribution of the linear beam with respect to a longitudinal direction of
20 the linear beams and thus correcting the light intensity distribution of the linear beam with respect to the longitudinal direction.

5. An optical moving amount detecting device as claimed
25 in claim 1, wherein the moving amount detecting unit

comprises a moving amount calculating section for determining correlation coefficients between first output waveform partial signals that are outputted at the first time point from a first partial area corresponding to part
5 of an image of the linear reflected beam on the light receiver with respect to the longitudinal direction and a plurality of sets of second output waveform partial signals that are outputted at the second time point from a plurality of partial areas corresponding to a plurality of
10 parts of an image of the linear reflected beam on the light receiver, determining a second partial area that results in a highest correlation coefficient at the second time point, and calculating the moving amount of the detection object on basis of an amount of shift between the first partial
15 area and the second partial area.

6. An optical moving amount detecting device as claimed in claim 5, wherein a size of the first partial area of the light receiver is such that the first output waveform
20 partial signals outputted from the first partial area can be discriminated from signals outputted at the first time point from areas other than the first partial area in the light receiver and wherein a size of a whole area of the light receiver is not smaller than a sum of the size of the
25 first partial area and of a moving amount of an image of

the linear reflected beam which amount corresponds to a predetermined moving amount of the detection object.

7. An optical moving amount detecting device as claimed
5 in claim 5, wherein the size of the whole area of the light receiver is equal to a sum of the size of the first partial area, the moving amount of the image of the linear reflected beam which amount corresponds to the predetermined moving amount of the detection object, and a
10 predicted amount of positional shift of the detection object from the moving amount.

8. Electronic equipment comprising the optical moving amount detecting device as claimed in claim 1.

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9. A conveyance processing system comprising:

the optical moving amount detecting device as claimed in claim 1,

a conveying section for conveying the detection
20 object,

a processing section for performing specified processing for the detection object, and

a controller for controlling the conveying section so as to align with a target position a position of the
25 detection object after conveyance, on basis of a moving

amount of the detection object that is detected by the optical moving amount detecting device.